

provided.

**Page 79, paragraph beginning at line 18, has been rewritten as indicated below:**

A further embodiment of the semiconductor device will be described below. Fig. 29 is a schematic sectional view showing a state in which a semiconductor device is mounted on a substrate for converting the interval of protrusive electrodes on the semiconductor devices. Fig. 30 is a schematic sectional view showing a state in which the gap between the semiconductor device 13 and the substrate for mounting the semiconductor device 13 is sealed with a resin 118.

#### REMARKS

Entry of this amendment in supplement to the Amendment filed March 17, 2003 is respectfully requested. By the present amendment, minor corrections have been made to the specification to correct informalities noted in reviewing this case.

Attached hereto is a marked-up version of the changes made to the specification by the current amendment. The attached page is captioned "Version with markings to show changes made."

If the Examiner believes that there are any other points which may be clarified or otherwise disposed of, either by telephone discussion or by personal interview, the Examiner is invited to contact applicants' undersigned attorney at the number indicated below.

To the extent necessary, the applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the

filing of this paper, including extension of time fees, to the deposit account of  
Antonelli, Terry, Stout & Kraus, Deposit Account No. 01-2135 (500.39240X00).

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP

By



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## **VERSION WITH MARKINGS TO SHOW CHANGES MADE**

### **In the Specification:**

**Page 16, paragraph beginning at line 11, has been amended as indicated below:**

In Fig. 1, a film appears 50 micrometers thick at a horizontal distance of 500 micrometers from one edge of the stress relaxation layer 5. Hence, the average gradient is 10%. The redistributing wire 4 is made of an electrical conductor such as copper. The redistributing wire 4 connects the aluminum pad 7 to a protrusive electrode [such as] and a bump pad 3 on a surface of the stress relaxation layer 5. A gold plating 2 for preventing the bump pad 3 from being oxidized may be provided on the bump pad 3. While a dicing area 24 is provided for dicing the wafer 9 having the plurality of semiconductors into individual semiconductor devices 13, the surface of the semiconductor device 13 is covered with a surface protective film 6 except a portion on the bump pad 3 and on the dicing area 24.

**Page 36, paragraph beginning at line 17 and continuing to page 37, has been amended as indicated below:**

Then, a reverse pattern shape 17 to the redistributing wire 4 is formed by using a resist with a photolithography technique. The resist in the edge portion of the stress relaxation layer 5 as represented by the area B in Fig. 4 is thicker in comparison with that in the other portion because of the resist coming down from the inclined portion in comparison with that in the other portion. Hence, a negative type resist is preferably used for keeping resolution high. If a liquid resist is used as the resist, the resist is apt to be thinner on the upper portion of the inclined surface on the edge of the stress relaxation layer 5 as represented by the area B in Fig. 4 and, on the other hand, the resist is apt to be thicker on the lower portion of the inclined surface. Hence, a wide developing margin with respect to the film thickness is required for patterning the resist different in film thickness between the upper portion

and the lower portion on the inclined surface in the same quantity of exposure and under the same developing condition. Generally, a developing margin of a negative type photosensitive resist is wider with respect to thickness than that of a positive type photosensitive resist. Therefore, a negative type photosensitive liquid resist is used in this embodiment. Incidentally, when a film resist is to be used, either negative type resist or positive type resist can be used because there is no film [heat] thickness difference produced between the upper and lower portions of the inclined surface. However, a negative type resist often afford a good result because the inclined portion is exposed so obliquely that the effective optical path length is elongated. When the inclination angle of the edge portion of the stress relaxation layer 5 is large or when a film resist having weak bleaching characteristic is used, a negative type resist is particularly preferably used.

**Page 46, paragraph beginning at line 6, has been amended as indicated below:**

The optimum value of the thickness of the nickel electroplating film is determined in accordance with the kind of solder and the reflow condition to be used in a post-process, and the characteristic (the structure of the assembled module) of a semiconductor device. Specifically, the optimum value may be determined so that the thickness of an alloy layer which is formed of solder and nickel at the time of solder reflow or mounting repair is not [smaller] larger than the thickness of the nickel plating film. The thickness of the alloy layer increases as the concentration of tin in solder increases. Besides, the thickness of the alloy layer increases as the upper limit in reflow temperature increases.

**Page 74, paragraph beginning at line 4, has been amended as indicated below:**

In the modified eighth step, a solder resist is applied onto the whole surface to form the surface protective film 6. Besides a spin coating method, a printing method using a mesh mask or a curtain coating method may be used as a method for applying the solder resist. To apply the solder resist, it is preferable that the wall surface of the dicing area of the stress relaxation layer 5 in the modified seventh step is not perpendicular to the wafer but V-shaped. This coating is performed after the modified seventh step is completed, that is, after the stress relaxation layer is cut. Hence, invasion of foreign matters such as [ions] water, which may cause peeling-off of the stress relaxation layer 5 from the surface of the wafer 9 having semiconductors formed thereon and ions which may cause spoilage of semiconductors, can be reduced. Hence, a device with good durability etc. can be provided.

**Page 79, paragraph beginning at line 18, has been amended as indicated below:**

A further embodiment of the semiconductor device will be described below. Fig. 29 is a schematic sectional view showing a state in which a semiconductor device is mounted on a substrate for converting the interval of protrusive electrodes on the semiconductor devices. Fig. 30 is a schematic sectional view showing a state in which the gap between the semiconductor device 13 and the substrate for mounting the semiconductor device 13 is sealed with a resin 118.